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MARSHALL, GERSTEIN & BORUN LLP
233 S. WACKER DRIVE, SUITE 6300
SEARS TOWER
CHICAGO, IL 60606

EXAMINER	
OSBORNE, LUKE R	

ART UNIT	PAPER NUMBER
2123	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/516,903	LECKENBY, MARK	
	Examiner	Art Unit	
	LUKE OSBORNE	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,4-22,24-27 and 30-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,4-22,24-27 and 30-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 December 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Status

1. Claims 2, 4-22, 24-27, 30-35 are pending in the instant application.

Claims 2, 4-22, 24-27, 30-35 stand rejected.

Examiner of Record

2. The Examiner of record has changed from Ayal Sharon to Luke Osborne.

Foreign Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

4. The drawings are objected to because Figures 1 and 2 contain hand drawn and hand written contents and reference characters and are not legible, thus non compliant with 37 CFR 1.84 (l) and (p).

The drawings are objected to because Figures 3-6 contain improper use of shading, reducing the legibility of said drawings. *The use of shading in views is encouraged if it aids in understanding the invention and if it does not reduce legibility* 37 C.F.R. 1.84 (M) Shading.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A

COMPACT DISC.

(f) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The specification is missing at least the heading for the Detailed Description of the Invention. Correction is required.

Claim Objections

5. Claims 5, 7, 10, 30 are objected to.

Claim 5 is objected to because of the following informalities: Claim 5 as amended depends from "claim 4 22", this is presumed to be a typo, and the claim depend from claim 22. Appropriate correction is required.

Claim 7 is objected to because of the following informalities: It is difficult to determine from the claimed limitations whether the steps of claim 7 are intended to replace a limitation from claim 22 or if it is intended to supplement a claim limitation of claim 22.

Claim 10 is objected to because of the following informalities: It is difficult to determine from the claimed limitations whether the steps of claim 10 are intended to

replace a limitation from claim 22 or if it is intended to supplement a claim limitation of claim 22. There is already a model provided in claim 22, is this the same model.

Claim 30 is objected to because of the following informalities: It is difficult to determine from the claimed limitations whether the steps of claim 30 are intended to replace a limitation from claim 27 or if it is intended to supplement a claim limitation of claim 27.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 8, 18, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "the device" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "each element" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "the power density level" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Any claim not directly rejected on 35 U.S.C 112, 2nd stands rejected due to its dependency.

The art rejections of the claim(s) listed above are applied as best understood in light of the rejection under 112, 2nd paragraph discussed above.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 2, 4-22, 24-27, 30-35 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 22 as exemplary of claims 22 and 27 are not tied to another statutory category of invention. The methods of claims 22 and 27 need to be tied to another category of invention to be statutory since they do not transform any physical entities.

Any claim not directly rejected on 35 U.S.C 101 stands rejected due to its dependency.

To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C 101(nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is prior art used in the rejections below.

Chang, K. Handbook of Microwave and Optical Components, pp.503-521. 1989. ("Chang Handbook").

Chang, K. et al., RF and Microwave Circuit and Component Design for Wireless Systems, pp.473-480 and 504-51 1, O 2002. ("Chang RF").

Applicant Admitted Prior Art from Applicants Specification.

8. Claims 22, 2, 4-7, 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang Handbook, in view of Applicant Admitted Prior Art.

In regards to Claim 22, Chang Handbook teaches the following limitations:

A method for determining field radiation levels for a antenna comprising determining far field radiation characteristics of a antenna, providing a model of the antenna, which model approximates the determined far field radiation characteristics and determining a near field radiation characteristic from the model for at least one point in space. (See Chang Handbook, especially: pages 514-51 6)

Chang Handbook does not expressly teach using the following formula to determine power density level Pd = PoweratAntenna * 10(Gd + 2.15)/10/4yrDi 2.

Applicant's admit on page 9 of the specification submitted on 12/3/04 that

> AAPA: As described in the Microwave Engineers Handbook, Volume 2, Artech House 1971 to Sadd, Theodore [i], the simplest way of estimating the power density radiated from antennas is to apply the far field power density formula to a point source representation of an antenna.
> To achieve sufficient accuracy manufacturers far field gain patterns must be used. These exhibit the antenna far field gain characteristics for all directions (i.e. 0 to 360°) in the horizontal and vertical planes. The far field power density formula is given by Pd = PoweratAntenna * 10(Gd + 2.15)/10/4yrDi 2.
> Where Pd is the estimated power density, Gd is the antennas gain with respect to a dipole at the analysis angle, PoweratAntenna is the power sent to the antenna after lossy items such as a signal feeders, Di is the distance from the antenna. Units for the formula are Watts per centimeter squared (Page 9, instant specification).

It would have been obvious to a person of ordinary skill in the art at the time of Applicants invention to combine the teachings of Chang Handbook with that of Admitted prior art to use a well established equation.

The motivation to do so would have been to use well established equations and models as specified in textbooks and manufactures.

In regards to Claim 2, Chang Handbook teaches the following limitations:

The method as claimed in claim 22 including the step of determining a boundary between the near field and far field radiation of the antenna.(See Chang Handbook, especially: pages 514-51 6).

In regards to Claim 4, Chang Handbook teaches the following limitations:

The method as claimed in claim 22 including the step of determining power density level over a plurality of positions in space. (See Chang Handbook, especially: pages 514-51 6).

In regards to Claim 5, Chang Handbook teaches the following limitations:

The method as claimed in claim 4 22 including the step of determining beam width characteristics of the antenna in two orthogonal far field radiation patterns. (See Chang Handbook, especially: pages 516-519)

In regards to Claim 6, Chang Handbook teaches the following limitations:

The method as claimed in claim 22 including the step of determining the 3dB beam width in two orthogonal far field radiation patterns. (See Chang Handbook, especially: pages 516-519. While the reference does not expressly teach the value of 3dB, it does teach that on p.517 that "[ilt is evident from this relationship that a large antenna is required to produce a pattern of narrow beamwidth, while a small antenna will radiate a broad beam.")

In regards to Claim 7, Chang Handbook teaches the following limitations:

The method as claimed in claim 22 including the step of determining physical characteristics of the antenna to determine the far field power flux density. (See Chang Handbook, especially: 'pages 516-519. The reference expressly teaches on p.517 that "[it is evident from this relationship that a large antenna is required to produce a pattern of narrow beamwidth, while a small antenna will radiate a broad beam.")

In regards to Claim 19, Chang Handbook teaches the following limitations:

The method as claimed claim 22 wherein the antenna is an aperture antenna. (See Chang Handbook, especially: pages 514-519. The reference expressly teaches on p.514 in the section titled "Aperture Antennas: Near Field and Far Field" that "Microwave antennas are usually designed to provide high directivity gain and narrow beamwidth. Most of these antennas belong to the class of aperture antennas . . .I1)

In regards to Claim 20, Chang Handbook teaches the following limitations:

The device as claimed in claim 19 including the step of determining the physical characteristics of the antenna and providing a model that represents the aperture by at least one Huygen 's wavelet source. (See Chang Handbook, especially: Table 10.1 on page 518.)

In regards to Claim 21, Chang Handbook teaches the following limitations:

The method as claimed in claim 20 including the step of summing the contribution from each wavelet source to each point in space. (See Chang Handbook, especially: Equations 10.23 to 10.32 on pages 516-518.)

9. Claims 24, 25, 27, 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Chang Handbook in view of AAPA.

In regards to Claim 27, Chang RF teaches the following limitations:

A method of estimating radiation power density of electromagnetic radiation comprising the steps of:

determining a model for a wire or aperture antenna based on radiation patterns;

representing the antenna as a plurality of point sources that radiate electromagnetic radiation;

estimating the power density level at a plurality of positions in space by using a power density formula for far field radiation and modifying the far field power density formula for near field radiation, which modification affects the antenna gain, power sent to the antenna and the distance from the antenna to the point source; and

determining the total power density level at each position by summing the contribution of each point source to the respective positions in space (See Chang RF, especially: pages 506-511).

Chang Handbook does not expressly teach using the following formula to determine power density level Pd = PoweratAntenna * 10(Gd + 2.15)/10/4yrDi 2.

Applicant's admit on page 9 of the specification submitted on 12/3/04 that

> AAPA: As described in the Microwave Engineers Handbook, Volume 2, Artech House 1971 to Sadd, Theodore [i], the simplest way of estimating the power density radiated from antennas is to apply the far field power density formula to a point source representation of an antenna.
> To achieve sufficient accuracy manufacturers far field gain patterns must be used. These exhibit the antenna far field gain characteristics for all directions (i.e. 0 to 360°) in the horizontal and vertical planes. The far field power density formula is given by Pd = PoweratAntenna * 10(Gd + 2.15)/10/4yrDi 2.
> Where Pd is the estimated power density, Gd is the antennas gain with respect to a dipole at the analysis angle, PoweratAntenna is the power sent to the antenna after lossy items such as a signal feeders, Di is the distance from the antenna. Units for the formula are Watts per centimeter squared (Page 9, instant specification).

It would have been obvious to a person of ordinary skill in the art at the time of Applicants invention to combine the teachings of Chang Handbook with that of Admitted prior art to use a well established equation.

The motivation to do so would have been to use well established equations and models as specified in textbooks and manufactures.

In regards to Claim 24, Chang RF teaches the following limitations:

The method as claimed in claim 27 including the step of displaying the power density level for a plurality of positions. (See Chang RF, especially: pages 506-511)

In regards to Claim 25, Chang RF teaches the following limitations:

The method as claimed in claim 24 including summing the power density level determined at each position for all point sources representing the antenna. (See Chang RF, especially: pages 506-511)

In regards to Claim 35, Chang RF teaches the following limitations:

The method as claimed in claim 27 wherein the model for the antenna is determined from two orthogonal far field radiation patterns. (See Chang RF, especially: pages 506-511)

10. Claims 8-18, 26, 30-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang Handbook in view of AAPA as applied to claim 22 and further in view of Chang RF.

In regards to Claim 8, Chang Handbook in view of AAPA does not expressly teach the claimed limitations:

The method as claimed in claim 22 including the step of providing a model that represents the device by a plurality of radiation sources. ~ Chang RF, on the other hand, expressly teaches that the use of "an array ~ of antennas working simultaneously . . . [for] the reception of transmission of energy in a particular direction." (See Chang RF, page 506).

Chang Handbook and Chang RF are analogous art because they are from ~ the same field of endeavor of Microwave component design.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the antenna analysis techniques of Chang Handbook with. those of Chang RF.

The suggestion / motivation for combining the references would have been the express teaching in Chang RF that the use bf "an array of antennas working simultaneously can focus the reception of transmission of energy in a particular direction, which increases the useful range of a system." (See Chang RF, page 506).

Therefore, it would have been obvious to a person of ordinary skill in the art to modify Chang Handbook with Chang RF to obtain the invention as specified in Claim 8.

In regards to Claim 9, Chang Handbook in view of AAPA does not expressly teach the claimed limitations:

The method as claimed in claim 22 wherein the antenna comprises a wire antenna. Chang RF, on the other hand, expressly teaches that wire antennas are one of the three categories of antennas (see pp.473-474), and teaches the use of Yagi-Uda antennas which are composed of wire segments (see pp.473-474), helix antennas which are one type of wire antenna (see pp.473-474 and 504- 506), calculating far field power (see pp. 475-478), and the use of antenna arrays (see pp.506-511).

Chang Handbook and Chang RF are analogous art because they are from the same field of endeavor of Microwave component design.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the antenna analysis techniques of Chang Handbook with those of Chang RF.

The suggestion/motivation for combining the references would have been the express teaching in Chang RF that the use of "an array of antennas working simultaneously can focus the reception of transmission of energy in a particular direction, which increases the useful range of a system." (See Chang RF, page 506).

Therefore, it would have been obvious to a person of ordinary skill in the art to modify Chang Handbook with Chang RF to obtain the invention as specified in Claim 9.

In regards to Claim 10, Chang Handbook does not expressly teach the claimed limitations:

The method as claimed in claim 9 including the step of providing a model that represents the antenna by a plurality of wire elements. Chang RF, however, does teach these elements. This claim is rejected on the same grounds as claims 8 and 9.

In regards to Claim 11, Chang Handbook does not expressly teach the claimed limitations:

The method as claimed in claim 10 including the step of estimating the length and spacing of each wire element forming the antenna. Chang RF, however, does teach these elements. This claim, is rejected on the same grounds as claims 8 and 9.

In regards to Claim 12, Chang Handbook does not expressly teach the claimed limitations:

The method as claimed in claim 11 wherein each wire element is represented as a radiation source. Chang RF, however, does teach these elements. This claim is rejected on the same grounds as claims 8 and 9.

In regards to Claim 13, Chang Handbook does not expressly teach the claimed limitations:

The method as claimed in claim 12 including the step of calculating mutual coupling between all the wire elements. Chang RF, however, does teach these elements. This claim is rejected on the same grounds as claims 8 and 9.

In regards to Claim 14, Chang Handbook does not expressly teach the claimed limitations:

The method as claimed in claim 13 including the step of assembling an N by N impedance matrix and calculating the voltage for each element to determine the current in each element. Chang RF, however, does teach these elements. This claim is rejected on the same grounds as claims 8 and 9.

In regards to Claim 15, Chang Handbook does not expressly teach the claimed limitations:

The method as claimed in claim 14 including the step of multiplying the inverse impedance matrix by the column voltage vector to determine the current in each element. Chang RF, however, does teach these elements. This claim is rejected on the same grounds as claims 8 and 9.

In regards to Claim 16, Chang Handbook teaches the following limitations:

The method as claimed in claim 15 including the step of assigning a Huygen's wavelet point source to each element and calculating the magnitude and phase of each wavelet point source from the current determined. (See Chang Handbook, especially: Table 10.1 on page 518.)

In regards to Claim 17, Chang Handbook teaches the following limitations:

The method as claimed in claim 16 including the step of summing the contribution of each point source to each point in, space within the near field. (See Chang Handbook, especially: pages 514-516)

In regards to Claim 18, Chang Handbook teaches the following limitations:

The method as claimed in claim 22, including the step of providing a single point source for each element with a length less than half a wavelength. (See Chang Handbook, especially: pages 514-516)

In regards to Claim 30, Chang Handbook does not expressly teach the claimed limitations:

The method as claimed in claim 27 including the step of applying a closest point algorithm to determine the power density level at each point in space. Chang RF, however, does teach these elements. This claim is rejected on the same grounds as claims 8 and 9.

In regards to Claim 31, Chang Handbook does not expressly teach the claimed limitations:

The method as claimed in claim 30 wherein the closest point algorithm determines the displacement of the point in space from the closest point on the antenna. Chang RF, however, does teach these elements. This claim is rejected on the same grounds as claims 8 and 9.

In regards to Claim 32, Chang Handbook does not expressly teach the claimed limitations:

The method as claimed in claim 31 wherein the closest point algorithm calculates X, Y, Z displacement vectors from the point in space to the closest point on the antenna and calculates azimuth and elevation angles to the closest point. Chang RF, however, does teach these elements. This claim is rejected on the same grounds as claims 8 and 9.

In regards to Claim 33, Chang Handbook does not expressly teach the claimed limitations:

The method as claimed in claim 30 wherein the closest point algorithm determines the orientation of the antenna and scales the power density level determined according to the orientation of the radiation device. Chang RF, however, does teach these elements. This claim is rejected on the same grounds as claims 8 and 9.

In regards to Claim 34, Chang Handbook does not expressly teach the claimed limitations:

The method as claimed in claim 30 wherein the closest point algorithm calculates the power density level using the power density formula and incorporates any modification factor applicable if the point in space is in the near field. Chang RF, however, does teach these elements. This claim is rejected on the same grounds as claims 8 and 9.

11. In regards to Claim 26, Chang RF in view of AAPA as applied to claim 25 above does not expressly teach the claimed limitations:

The method as claimed in claim 25 including the step of calculating far field and near field tapering characteristics for each position. Chang Handbook, on the other hand, expressly teaches calculating far field and near field tapering characteristics for each position (See Chang Handbook, pages 514-516).

Chang RF and Chang Handbook are analogous art because they are from the same field of endeavor of Microwave component design..

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the antenna analysis techniques of Chang RF with those of Chang Handbook.

The suggestion / motivation for combining the references would have been the express teaching'in Chang RF that the use of "an array of antennas working simultaneously can focus the reception of transmission of energy in a particular direction, which increases the useful range of a system." (See Chang RF, page 506), while Chang Handbook teaches the far field and near field calculations for a single antenna.

Therefore, it would have been obvious to a person of ordinary skill in the art to modify Chang Handbook with Chang RF to obtain the invention as specified in Claim 26.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUKE OSBORNE whose telephone number is (571)272-4027. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Luke Osborne/
Examiner, Art Unit 2123

/Paul L Rodriguez/
Supervisory Patent Examiner,
Art Unit 2123